CLAIMS

1. Device for attenuation of noise in a tube intended to transport a gas, comprising a branch tube having two ends each of which opens into said tube by a respective connection, and at least one tube referred to as quarter wave tube having a closed end referred to as the free end and another end which is connected to said tube at the level of the connections of the branch tube, thus forming three sections of circulation of gas entering into said tube.

2. Device for attenuation of noise according to claim 1, wherein a length L2 of the branch tube, a length L3 of said tube between the connections of the branch tube, and a length L4 of said at least one quarter wave tube are defined as follows:

$$L2 = \lambda - 0.85\ D2$$

$$L3 = \tfrac{1}{2}\ \lambda - 0.85\ D3$$

$$L4 = \tfrac{1}{4}\ \lambda - 0.425\ D4$$

wherein λ is a wavelength to be treated, D2 is a diameter of the branch tube, D3 is a diameter of said tube between the connections of the branch tube, and D4 is a diameter of said at least one quarter wave tube.

3. Device for attenuation of noise according to claim 1, wherein a diameter of each of the sections is determined such that it is as close as possible to a diameter of said tube and to a diameter of each of the other tubes.

4. Device for attenuation of noise according to claim 2, wherein a diameter of each of the sections is determined such that it is as close as possible to a diameter of said tube and to a diameter of each of the other tubes.

5. Device for attenuation of noise according to claim 1, wherein the sections and said tube all have the same diameter.

6. Device for attenuation of noise according to claim 2, wherein the sections and said tube all have the same diameter.

7. Device for attenuation of noise according to claim 1, wherein diameters of the sections are determined as a function of a diameter of the tube to be treated as follows:

$$D1 = D4$$

$$\text{and } D2 = D3 = \tfrac{3}{4}\ D1,$$

wherein D1 is a diameter of said tube outside of the connections of the branch tube, D2 is a diameter of the branch tube, D3 is a diameter of said tube between the connections of the branch tube, and D4 is a diameter of said at least one quarter wave tube.

8. Device for attenuation of noise according to claim 2, wherein diameters of the sections are determined as a function of a diameter of the tube to be treated as follows:

$$D1 = D4$$

$$\text{and } D2 = D3 = \tfrac{3}{4}\ D1,$$

wherein D1 is a diameter of said tube outside of the connections of the branch tube, D2 is a diameter of the branch tube, D3 is a diameter of said tube between the connections of the branch tube, and D4 is a diameter of said at least one quarter wave tube.

9. Device for attenuation of noise according to claim 1, comprising two quarter wave tubes each having a closed end referred to as the free end and another end which is connected to said tube at the level of the connections of the branch tube, respectively, thus forming four sections of circulation of gas entering into said tube.

10. Device for attenuation of noise according to claim 2, comprising two quarter wave tubes each having a closed end referred to as the free end and another end which is connected to said tube at the level of the connections of the branch tube, respectively, thus forming four sections of circulation of gas entering into said tube.

11. Device for attenuation of noise according to claim 3, comprising two quarter wave tubes each having a closed end referred to as the free end and another end which is connected to said tube at the level of the connections of the branch tube, respectively, thus forming four sections of circulation of gas entering into said tube.

12. Device for attenuation of noise according to claim 4, comprising two quarter wave tubes each having a closed end referred to as the free end and another end which is connected to said tube at the level of the connections of the branch tube, respectively, thus forming four sections of circulation of gas entering into said tube.

13. Device for attenuation of noise according to claim 5, comprising two quarter wave tubes each having a closed end referred to as the free end and another end which is connected to said tube at the level of the connections of the branch tube, respectively, thus forming four sections of circulation of gas entering into said tube.

14. Device for attenuation of noise according to claim 6, comprising two quarter wave tubes each having a closed end referred to as the free end and another end which is connected to said tube at the level of the connections of the branch tube, respectively, thus forming four sections of circulation of gas entering into said tube.

15. Device for attenuation of noise according to claim 7, comprising two quarter wave tubes each having a closed end referred to as the free end and another end which is connected

to said tube at the level of the connections of the branch tube, respectively, thus forming four sections of circulation of gas entering into said tube, wherein said quarter wave tubes have the same diameter.

16. Device for attenuation of noise according to claim 8, comprising two quarter wave tubes each having a closed end referred to as the free end and another end which is connected to said tube at the level of the connections of the branch tube, respectively, thus forming four sections of circulation of gas entering into said tube.

17. Device for attenuation of noise according to claim 9, wherein the free ends of the quarter wave tubes are connected to each other.

18. Device for attenuation of noise according to claim 10, wherein the free ends of the quarter wave tubes are connected to each other.

19. Gas conduit for a motor vehicle engine of the intake conduit type, comprising at least one device for noise attenuation according to claim 1.

20. Gas conduit for a motor vehicle engine of the intake conduit type, comprising at least one device for noise attenuation according to claim 9.